

**CLAIMS:**

1. An enhanced gas range system comprising:  
a pressure regulator adapted to regulate a gas flow from a gas feed line;  
a gas fuel boost pump disposed downstream of the pressure regulator and adapted to increase pressure of the gas flow received from the gas feed line;  
and a gas burner disposed to receive the gas flow from the gas fuel boost pump.
2. The system of claim 1, further comprising flow control circuitry coupled to the gas fuel boost pump for regulating the gas flow through the gas fuel boost pump based upon a user-defined input.
3. The system of claim 2, the flow control circuitry comprising a controller that calculates the desired gas flow based upon the user-defined input and transmits a signal for regulating the gas flow of the gas fuel boost pump.
4. The system of claim 1, wherein the gas fuel boost pump is a variable speed pump.
5. The system of claim 1, wherein the gas fuel boost pump is a variable displacement pump.
6. The system of claim 1, further comprising at least one orifice coupled to the gas burner and adapted to direct gas into the gas burner.
7. The system of claim 6, the gas burner comprising a venturi located downstream of the orifice for primary air entrainment through mixing gas and air.
8. The system of claim 1, the gas burner further comprising a plurality of burner ports for secondary air entrainment.

9. The system of claim 1, wherein the gas fuel boost pump is coupled to a plurality of gas burners for increasing primary air entrainment of the gas flow.

10. The system of claim 9 further comprising a throttling valve coupled to each of the plurality of the gas burners, the throttling valve being adapted to control individual gas flow for each burner.

11. An enhanced gas range system comprising:  
a pressure regulator adapted to regulate gas flow from a gas feed line;  
a gas fuel boost pump placed downstream of the pressure regulator and adapted to increase a pressure of the gas flow received from the gas feed line;  
a gas burner disposed to receive the gas flow from the gas fuel boost pump;  
and  
a transducer disposed upstream of the gas burner and adapted to measure a parameter of gas flow from the gas fuel boost pump pressure at a predetermined location.

12. The system of claim 11, further comprising flow control circuitry coupled to the gas fuel boost pump and the transducer for regulating the gas flow through the gas fuel boost pump based upon a user-defined input and a signal received from the transducer.

13. The system of claim 12, the flow control circuitry further comprising a controller that calculates the desired gas flow based upon the user-defined input and the signal received from the transducer, and wherein the controller transmits a signal for regulating the gas flow of the gas fuel boost pump.

14. The system of claim 11, wherein the gas fuel boost pump is a variable speed pump.

15. The system of claim 11, wherein the gas fuel boost pump is a variable displacement pump.

16. The system of claim 11, further comprising at least one orifice coupled to the gas burner and adapted to direct gas into the gas burner.

17. The system of claim 16, the gas burner further comprising a venturi located downstream of the orifice for primary air entrainment through mixing gas and air.

18. The system of claim 11, the gas burner further comprising a plurality of burner ports for secondary air entrainment.

19. The system of claim 11, wherein the predetermined location is upstream of the orifice.

20. The system of claim 11, the gas fuel boost pump is coupled to a plurality of gas burners for increasing primary air entrainment of the gas flow.

21. The system of claim 20 further comprising a throttling valve coupled to each of the plurality of the gas burners wherein, the throttling valve is adapted to control the individual gas flow for each burner unit.

22. A method of enhancing performance of a gas burner, having a gas as fuel comprising:

actively increasing pressure of a gas flow through a gas feed line via a gas fuel boost pump; and

regulating the gas flow of the gas fuel boost pump based upon a user-defined input to regulate a burner heat output to a desired burner output.

23. The method of claim 22, wherein regulating the gas flow comprises receiving the user-defined input, calculating a desired flow value and transmitting a signal representative of the desired flow value to the gas fuel boost pump.

24. The method of claim 22, wherein the user-defined input is a type of gaseous fuel.

25. The method of claim 24, wherein the gaseous fuel is natural gas.

26. The method of claim 24, wherein the gaseous fuel is propane.

27. The method of claim 22, wherein the user-defined input is an altitude of a place of installation of a gas range system.

28. The method of claim 22, wherein the user-defined input is a required burner output power.

29. A method of enhancing a gas burner performance comprising:  
increasing pressure of a current gas flow through a gas feed line via a gas fuel boost pump;

measuring a parameter of gas flow from the gas fuel boost pump at a predetermined location via a transducer; and

regulating the gas flow through the gas fuel boost pump based upon a user-defined input and a signal received from the transducer.

30. The method of claim 29, wherein the gas burner is coupled to at least one orifice adapted to direct the gas into the gas burner.

31. The method of claim 29, wherein measuring a parameter of gas flow comprises detecting a pressure difference in the predetermined location via a pressure transducer.

32. The method of claim 29, wherein the predetermined location is upstream of an orifice.

33. The method of claim 29, wherein regulating gas flow further comprises calculating a desired flow value based on the user-defined input and the signal from the transducer, and transmitting a signal for regulating the desired flow value to the gas fuel boost pump.

34. A system for enhancing primary air entrainment in a gas burner comprising:

a pressure regulator adapted to regulate a gas flow from a gas feed line;

a gas fuel boost pump disposed downstream of the pressure regulator and adapted to increase primary air entrainment of the gas flow received from the gas feed line; and

a gas burner disposed for receiving the gas flow from the gas fuel boost pump.

35. The system of claim 34, wherein the gas fuel boost pump is adapted to increase a pressure of the gas flow to increase the primary air entrainment of the gas flow.

36. The system of claim 34, further comprising flow control circuitry coupled to the gas fuel boost pump for regulating the gas flow through the gas fuel boost pump based upon a user-defined input.

37. The system of claim 36, the flow control circuitry comprising a controller that calculates the desired gas flow based upon the user-defined input and transmits a signal for regulating the gas flow of the gas fuel boost pump to increase the primary air entrainment of the gas flow.

38. The system of claim 34, further comprising at least one orifice coupled to the gas burner and adapted to direct gas into the gas burner.

39. The system of claim 38, the gas burner comprising a venturi located downstream of the orifice for primary air entrainment through mixing gas and air.